

Amendments to the Specification

Please replace the title beginning at page 1, line 1, with the following rewritten title:

VIRTUAL WIRE ASSEMBLY HAVING ~~HERMITIC~~ HERMETIC FEEDTHROUGHS

Please replace the paragraph 29, beginning at page 5, with the following rewritten paragraph:

An example of a prior art ceramic feedthrough assembly for a cochlear implant is shown in FIG. 1. A ceramic disc 1 is machined to about 10 mm in diameter and 2 mm in thickness, and has twenty-eight individual holes 2, punched there through to accommodate each of the connector pins 3 (shown unconnected in FIG. 1). Following insertion of each connector pin 3 into each respective hole 2, ceramic disc 1 is further machined to provide grooves 4. Ceramic disc 1 is then sintered to provide ~~hermiticity~~ hermeticity to the entire assembly.

Please replace the paragraph 36, beginning at page 7, with the following rewritten paragraph:

As noted, opposing ends of each conductive region 13 are accessible at each side of substrate 14. Each side of conductive region 13 is in electrical communication with an electrical contact, such as a terminal, pad or wire, to form a conductive pathway or virtual connector pin that eliminates the need for drilling and insertion of physical pins, and that eliminates the subsequent problems associated with ensuring ~~hermiticity~~ hermeticity. Each conductive pathway is, as noted, formed to ensure that conductive pathway is localized with respect to the other conductive pathways on the substrate.

Please replace the paragraph 47, beginning at page 9, with the following rewritten paragraph:

It should be appreciated from the above that each conductive pathway acts as a “virtual wire” that preferably eliminates the need for drilling and insertion of physical pins, and the subsequent problems associated with ensuring ~~hermiticity~~ hermeticity. Certain embodiments of the present invention also provide a virtual wire that is advantageous over

the conventional because no pin is fed through a hole in the device, rather conductive pathways without holes act as pins. This may decrease the likelihood of deterioration of the device when used in medical implant applications. In addition, an advantage of certain embodiments of the present invention is that the use of virtual wire allows a greater density of conductive pathways to be placed onto a substrate without increasing the need for more hermetical seals. A further advantage of some embodiments of the present invention is that they allow for the precise positioning of the electrical contacts by arrangement of conductive pathways.

Please replace the paragraph 64, beginning at page 13, with the following rewritten paragraph:

In another embodiment of the present invention, a substrate having conductive regions may form the entire casing for the internal circuitry. Such a unibody device allows conductive pathways to be formed on any face of the substrate and complete eliminates the need for ~~hermitically~~hermetically sealing a virtual wire assembly to a casing. Wires for the device may be deposited in the device using known techniques such as chemical vapor deposition. A unibody may be mounted inside a protective casing, such as a metal casing, as necessary when used in the various applications.

Amendments to the Drawings

The attached sheet of drawings includes changes to FIGS. 1 through 13. These sheets, which includes FIGS. 1 through 13, replaces the original sheet including FIGS. 1 through 13.

Attachment: One Replacement Sheet